



STIC Search Report

EIC 3700

STIC Database Tracking Number: 141784

TO: Darwin Erez
Location: RND 6b71
Art Unit: 3731
Friday, January 07, 2005

Case Serial Number: 10/057197

From: Emory Damron
Location: EIC 3700
Randolph 8-A-34
Phone: 571-272-3520

Emory.Damron@uspto.gov

Search Notes

Dear Darwin,

Please find below an inventor search in the bibliographic and full-text foreign patent files, as well as keyword searches in the patent and non-patent literature files, both bibliographic and full text.

References of potential pertinence have been tagged, but please review all the packets in case you like something I didn't.

Of those references which have been tagged, please note any manual highlighting which I've done within the document.

In addition to searching on Dialog, I also searched EPO/JPO/Derwent, Scirus/ScienceDirect, and Google Scholar.

There are a few decent references contained herein, but I'll let you determine how useful they may be to you.

Please contact me if I can refocus or expand any aspect of this case, and please take a moment to provide any feedback (on the form provided) so EIC 3700 may better serve your needs. Good Luck!

Sincerely,

Emory Damron

Technical Information Specialist

EIC 3700, US Patent & Trademark Office

Phone: (571) 272-3520/ Fax: (571) 273-0047

Emory.damron@uspto.gov



Set	Items	Description
S1	1732667	AEROSOL? OR VOLATIL? OR VAPOR? OR VAPOUR? OR NEBULI? OR HE- AT? OR ATOMIZ? OR ATOMIS? OR PYROLYS? OR PYROLYZ? OR PYROLYT?
S2	2096803	GENERAT? OR MANUFACTUR?
S3	4415748	CREAT? OR FORM???
S4	1081172	CONSTITUT? OR COMPOS?
S5	2447672	PRODUC? OR MAKE?
S6	1631879	MADE OR MAKING OR FORMULAT? OR FABRICAT?
S7	2659994	REGULAT? OR CONTROL? OR MANAG?
S8	998396	MIX OR MIXES OR MIXED OR MIXING OR MIXTUR? OR ADMIX? OR IN- TERMIX? OR COMMIX? OR SYNCRET? OR SYNCRES? OR SYNCREZ?
S9	910556	BLEND? OR INTERMINGL? OR COMMINGL? OR MINGL? OR MELD? OR M- ERG? OR INFUS? OR DISPERS? OR COMBINE? OR COMBINING? OR COMBI- NAT?
S10	1336078	COMPOUND? OR SUBSTANCE? OR AGENT? OR (ACTIVE? OR BIOACTIVE- ?) () INGREDIENT? OR PHYSIOLOG? () ACTIVE?
S11	410481	DILUENT? OR ANESTHET? OR ANAESTHET? OR PHARMACEUTIC? OR ME- DICAMENT? OR MEDICIN? OR MEDICAL? OR DRUG?
S12	3360815	LIQUID? OR POWDER? OR SOLUTE? OR SOLUTION? OR CHEMICAL? OR -PRODRUG? OR MATERIAL?
S13	917035	GAS OR GASSES OR GASES OR GASEOUS? OR (DILUT? OR MIXING OR CARRIER OR BREATH? OR INHAL?) (5N)AIR
S14	2167619	(METHOD? ? OR SYSTEM? ? OR PROCEDUR? OR PROCESS?? OR TECHN- IQUE? OR MODE?) (5N)S1:S13
S15	1928611	RATIO OR RATIOS OR PERCENTAG? OR PROPORTION? OR RATE OR RA- TES OR CONCENTRATION? OR STRENGTH OR PURIT? OR PURENESS OR DE- NSIT? OR FRACTION?
S16	1573780	SIZE? OR DIMENSION? OR DIAMET? OR MICRON? OR MICROMET? OR - GIRTH? OR WIDTH? OR WIDENESS?
S17	645676	PARTICLE? OR PARTICULAT? OR PARTICULANT? OR PULVERANT? OR - GRIT OR GRANULAT? OR GRANULE? OR GRAIN? ? OR DROPLET?
S18	1193953	DESIRED? OR DESIRABL? OR OPTIMUM? OR DEFINITE? OR DEFINED? OR SUITABL? OR PARTICULAR OR DISTINCT?
S19	908814	CALCULATED? OR INTENTIONAL OR INTENDED OR SPECIFIC? OR PRE- CISE?
S20	881122	IC=(A61M? OR A61K? OR C09K? OR B01F? OR H05B? OR A61B?)
S21	65175	S14 AND S1 AND S2:S9 AND S10:S12 AND S13
S22	3538	S21 AND S20
S23	65175	S21:S22
S24	400	S23 AND S18:S19(5N)S17(5N)S16
S25	46	S24 AND S20
S26	123	S24 AND S15(10N) (S8:S9 OR S7 OR S13)
S27	147	S24 AND S2:S7(5N)S1
S28	0	S24 AND S8:S9(5N)10:S13
S29	365	S24 AND S1:S9(5N)S10:S13
S30	294	S24 AND S18:S19(5N)S16
S31	269	S29 AND S30
S32	46	S29:S31 AND S20
S33	240	S25:S27 OR S32
S34	46	S25 OR S32
S35	46	IDPAT. (sorted in duplicate/non-duplicate order)
S36	194	S33 NOT S34
S37	194	IDPAT (sorted in duplicate/non-duplicate order)

? show files

File 350:Derwent WPIX 1963-2005/UD,UM &UP=200501

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S14	2167619	(METHOD? ? OR SYSTEM? ? OR PROCEDUR? OR PROCESS?? OR TECHN- IQUE? OR MODE?) (5N) S1:S13
S15	1928611	RATIO OR RATIOS OR PERCENTAG? OR PROPORTION? OR RATE OR RA- TES OR CONCENTRATION? OR STRENGTH OR PURIT? OR PURENESS OR DE- NSIT? OR FRACTION?
S16	1573780	SIZE? OR DIMENSION? OR DIAMET? OR MICRON? OR MICROMET? OR - GIRTH? OR WIDTH? OR WIDENESS?
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S18	1193953	DESIRED? OR DESIRABL? OR OPTIMUM? OR DEFINITE? OR DEFINED? OR SUITABL? OR PARTICULAR OR DISTINCT?
S19	908814	CALCULATED? OR INTENTIONAL OR INTENDED OR SPECIFIC? OR PRE- CISE?
S20	881122	IC=(A61M? OR A61K? OR C09K? OR B01F? OR H05B? OR A61B?)
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S23	65175	S21:S22
S24	400	S23 AND S18:S19(5N)S17(5N)S16
S25	46	S24 AND S20
S26	123	S24 AND S15(10N) (S8:S9 OR S7 OR S13)
S27	147	S24 AND S2:S7(5N)S1
S28	0	S24 AND S8:S9(5N)10:S13
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S30	294	S24 AND S18:S19(5N)S16
S31	269	S29 AND S30
S32	46	S29:S31 AND S20
S33	240	S25:S27 OR S32
S34	46	S25 OR S32
S35	46	IDPAT (sorted in duplicate/non-duplicate order)
S36	194	S33 NOT S34
S37	194	IDPAT (sorted in duplicate/non-duplicate order)
S38	240	S34 OR S36 OR S33
S39	160	S24 NOT S38
S40	0	S39 AND S20
S41	0	S39 AND S1(5N)S2:S7
S42	78	S39 AND S10:S11
S43	78	IDPAT (sorted in duplicate/non-duplicate order)
S44	26615	S1(5N)S10:S12 AND S8:S9(5N)S1
S45	3665	S44 AND S20

S46	27	S45 AND S18:S19(5N)S16 AND S17(5N)S16
S47	20	S46 AND (S13 OR S15)
S48	27	S46:S47
S49	23	S48 NOT (S42 OR S38)
S50	23	IDPAT (sorted in duplicate/non-duplicate order)
?		

35/3,K/12

DIALOG(R)File 350:Derwent WPIX

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015553791 **Image available**

WPI Acc No: 2003-615946/200358

XRAM Acc No: C03-168024

XRPX Acc No: N03-490432

New device with a particle- generating system and an optimized air flow path, useful as an inhalation instrument for the pulmonary delivery of a compound such as a drug or prodrug

Patent Assignee: VAPOTRONICS INC (VAPO-N)

Inventor: GOODALL S F; LACKEY R P; REINHOLD O; TAUB J P

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030072717	A1	20030417	US 2001271193	P	20010223	200358 B
			US 200280504	A	20020222	

Priority Applications (No-Type-Date): US 2001271193 P 20010223; US 200280504 A 20020222

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030072717	A1		8	A61L-009/04	Provisional application US 2001271193

New device with a particle- generating system and an optimized air flow path, useful as an inhalation instrument for the pulmonary delivery of a compound such as a drug or prodrug

Abstract (Basic):

... A device for delivering an **aerosolized compound** comprising

...a) a reservoir (1) that stores the **compound** ;
(...

...b) a system (2) with an entry port (4) and an element that **generate** particles for ejection; and...

...c) a housing (7) with an inlet (8) and outlet (9) between which is **formed** an airflow path (12), is new.

... A device for delivering an **aerosolized compound** comprising

...a) a reservoir (1) that stores the **compound** ;
(...

...b) a system (2) with an entry port (4) and an element that **generate** particles for ejection; and...

...c) a housing (7) with an inlet (8) and outlet (9) between which is **formed** an airflow path (12), is new...

...a) a reservoir that stored the **compound** ;
(...

...b) a system comprising an entry port and an element to **generate particles** of a **desired size** for ejection from an ejection head (6) of the element, where the particles comprise a **compound** , and where the **system** is fluidly connected to a reservoir; and...

...c) a housing comprising an inlet and an outlet between which is **formed**

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an airflow path and in which at least the ejection head is disposed in the...

...1) delivering an **aerosolized compound** to a patient by **inhaling air**, which contains a **compound**, through the **particle-generating device** cited above while the **particle-generating system** of the device is actuated; and...

...2) **generating** an air stream comprising the **compound** cited above, where the air is drawn from the inlet to the outlet of the...

...The device is useful as an inhalation instrument for the pulmonary delivery of a **compound** such as a **drug** or **prodrug**. The device is particularly useful for **generating** an air stream containing a **compound**, where the air stream comprises air paths with minimal turbulence...

...Unlike prior devices, which are dependent on user **technique** (which **makes** dosages variable from person to person, and dose to dose), the present device is capable of efficient, effective, and consistent delivery of desired dosages of a systemic **pharmaceutical** to a patient via the pulmonary route. The device provides less deposition of **aerosolized compound** within the inhaler, and a more effective transfer of the dispensed **material** into the **inhaled air** stream...

...The figure shows a device with a **particle-generating system**.

Technology Focus:

... Preferred Device: The **compound** is stored in the reservoir in a **liquid formulation**. The **compound** is a **pharmaceutical compound** consisting of a protein (e.g. a hormone, a receptor, an antibody or an enzyme), a small molecule (e.g. a small molecule **drug** or **prodrug**), or a gene delivery vehicle. The reservoir and **particle-generating system** are disposed within the housing, where the reservoir is aerodynamically shaped, or integrated into a single detachable unit. The reservoir is detachable. The **particle-generating system** is an electronic ejection device, which uses **heat** to **generate** particle ejected from the ejection head, or a piezoelectric component to **generate particles** ejection from the ejection head. The **desired size** of the **particles** is a **size** that allows the **particles** to transit to and be deposited in the alveoli. At least 90% of the particles...

...laminar prior to exiting the housing outlet. The substantially unobstructed airflow comprises a substantially homogenous **mixture** of the ejected **compound** and air in the airflow prior to exiting the housing outlet. The inner surface of...

...Title Terms: **GENERATE** ;

International Patent Class (Additional): **A61K-009/14** ...

... **A61M-011/00**

35/3,K/18

DIALOG(R)File 350:Derwent WPIX

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015060453 **Image available**

WPI Acc No: 2003-120969/200311

XRAM Acc No: C03-031504

Preparation of particulate material for producing powder of pharmaceutically active agents delivered by inhaler, involves atomizing solution of material, and drying by volatilizing solvent with laser

Patent Assignee: ML LAB PLC (MLML-N)

Inventor: BRAITHWAITE P

Number of Countries: 100 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 2002100378	A2	20021219	WO 2002GB2423	A	20020610	200311	B
AU 2002302767	A1	20021223	AU 2002302767	A	20020610	200452	

Priority Applications (No Type Date): GB 200114033 A 20010609

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 2002100378 A2 E 17 A61K-009/14

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

AU 2002302767 A1 A61K-009/14 Based on patent WO 2002100378

Preparation of particulate material for producing powder of pharmaceutically active agents delivered by inhaler, involves atomizing solution of material, and drying by volatilizing solvent with laser

Abstract (Basic):

... Preparation of particulate material (8) involves...

...i) Atomizing solution of the material (1); and...

...ii) drying the solvent by volatilizing with a laser (7).

... 1) A particulate material ;

(...

...2) A dry powder inhaler...

...3) A pharmaceutical composition comprises particulate material containing pharmaceutically active agent ;

(...

...For preparing particulate material (claimed) used to produce powder of pharmaceutically active agents for treatment of asthma, chronic obstructive pulmonary disease and respiratory infections...

...The method produces powder of thermally unstable material such as pharmaceutically active agents. The particles disperses easily from an inhaler at both high and low flow rates. The particles produced by the method, are strong and not broken during encapsulation and/or delivery. The use of spray drying method provides large batch production of fine powders, thereby decreasing

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required quality control and preventing recrystallization and micronization to obtain the drug in desired form . The parameters in spray drying, such as air flow rate, air temperature and rate of feed of solution , is easily adjusted to produce the desired product . The inert gas is recycled to avoid loss of entrained drug , and to conserve energy and inert gas . The size of the particles produced is controlled by the laser. The particle collection system is designed to capture particles of desired size and to maximize the yield...

...The figure shows the schematic diagram for manufacture of the particulate material .

...

... Material (1...

...Particulate material (8

Technology Focus:

... Preferred Substance : The particulate material comprises insulin and/or dextrin as pharmaceutically active agent .

...Title Terms: MATERIAL ;

International Patent Class (Main): A61K-009/14

35/3,K/37

DIALOG(R)File 350:Derwent WPIX

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012965031 **Image available**

WPI Acc No: 2000-136882/200012

XRAM Acc No: C00-041954

Process for preparing a suspension of sub-micron particles of a water-insoluble or water biologically active compound

Patent Assignee: SKYEPHARMA CANADA INC (SKYE-N); RTP PHARMA INC (RTPP-N)

Inventor: GODINAS A; HENRIKSON I B; KRUKONIS V; MISHRA K A; PACE G W;

VACHON G M; HENRIKSEN I B; MISHRA A K; VACHON M G

Number of Countries: 087 Number of Patents: 015

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9965469	A2	19991223	WO 99US13755	A	19990618	200012 B
AU 9946938	A	20000105	AU 9946938	A	19990618	200024
US 6177103	B1	20010123	US 9889852	P	19980619	200107
			US 99335735	A	19990618	
EP 1089714	A2	20010411	EP 99930387	A	19990618	200121
			WO 99US13755	A	19990618	
SE 200004620	A	20010208	WO 99US13755	A	19990618	200121
			SE 20004620	A	20001214	
KR 2001053041	A	20010625	KR 2000714477	A	20001219	200173
CN 1312708	A	20010912	CN 99809666	A	19990618	200202
JP 2002518318	W	20020625	WO 99US13755	A	19990618	200243
			JP 2000554349	A	19990618	
EP 1089714	B1	20030305	EP 99930387	A	19990618	200318
			WO 99US13755	A	19990618	
AU 755993	B	20030102	AU 9946938	A	19990618	200319
DE 69905716	E	20030410	DE 99605716	A	19990618	200332
			EP 99930387	A	19990618	
			WO 99US13755	A	19990618	
EP 1319400	A2	20030618	EP 99930387	A	19990618	200340
			EP 200375224	A	19990618	
SE 521255	C2	20031014	WO 99US13755	A	19990618	200369
			SE 20004620	A	20001214	
ES 2194477	T3	20031116	EP 99930387	A	19990618	200381
AU 2003203459	A1	20030612	AU 9946938	A	19990618	200456 N
			AU 2003203459	A	20030402	

Priority Applications (No Type Date): US 9889852 P 19980619; US 99335735 A 19990618; AU 2003203459 A 20030402

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9965469 A2 E 20 A61K-009/16

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9946938 A A61K-009/16 Based on patent WO 9965469

US 6177103 B1 A61K-009/14 Provisional application US 9889852

EP 1089714 A2 E A61K-009/16 Based on patent WO 9965469

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

SE 200004620 A A61K-009/51

KR 2001053041 A A61K-009/16

CN 1312708 A A61K-009/16

JP 2002518318 W 24 A61K-009/16 Based on patent WO 9965469

EP 1089714 B1 E A61K-009/16 Based on patent WO 9965469
 Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
 LU MC NL PT SE
 AU 755993 B A61K-009/16 Previous Publ. patent AU 9946938
 Based on patent WO 9965469
 DE 69905716 E A61K-009/16 Based on patent EP 1089714
 Based on patent WO 9965469
 EP 1319400 A2 E A61K-009/16 Div ex application EP 99930387
 Div ex patent EP 1089714
 Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
 LU MC NL PT SE
 SE 521255 C2 A61K-009/51
 ES 2194477 T3 A61K-009/16 Based on patent EP 1089714
 AU 2003203459 A1 A61K-009/16 Div ex application AU 9946938
 ... **preparing a suspension of sub-micron particles of a water-insoluble or
 water biologically active compound**

Abstract (Basic):

... a) dissolving a water-insoluble or water-insoluble biologically
 active **compound** and a first surface modifier in a liquefied
 compressed **gas** solvent to **form a solution**; and...
 ...b) expanding the compresses fluid **solution** in (a) into a water or an
 aqueous **solution** containing a second surface modifier and
 water-soluble **agents**.
 ... nm, more preferably 5-200 nm (all claimed). Ninety-nine percent
 (99%) of the particles **produced** are below 2000 nm (claimed...
 ...The **process** has a high **productivity** based on the use of liquefied
gas solvents, including supercritical fluid technology, that yields
 surface modifier stabilized suspensions of water insoluble **drugs** with
 a particle size of 50-2000 nm and a narrow size distribution. The
 process is robust, scalable and applicable to a wide range of
 water-insoluble **compounds** with biological uses. The **process** of this
 invention is believed to induce rapid nucleation of the liquefied- **gas**
 dissolved **drugs** and other biologically active **substances** in the
 presence of modifying **agents** resulting in **particle** formation with a
desirable sized distribution in a very short time...

Technology Focus:

... process further includes (c) high pressure homogenizing the
 suspension from (b), and (d) recovering the **produced** microparticles
 ...
 ...phosphatidylcholine, phospholipon 90H or dimyristoyl
 phosphatidylglycerol sodium salt, phosphatidylethanolamine,
 phosphatidylserine, phosphatidic acid, lysophospholipids or their
combinations; or a surfactant from polyoxyethylene sorbitan fatty acid
 ester, a block copolymer of ethylene oxide...
 ...aryl polyether sulfonate, polyethylene glycol, hydroxy
 propylmethylcellulose, sodium dodecylsulfate, sodium deoxycholate,
 cetyltrimethylammonium bromide or their **combinations**; or a **mixture**
 of two or more surfactants. At least one surface modifier is a
 surfactant devoid or...

Extension Abstract:

SPECIFIC COMPOUNDS - ...

...An active **compound** is a cyclosporine, fenofibrate, or alphaxalone...

...A liquefied **gas** **solution** of water insoluble **substance** was

introduced at high pressure (greater than 1000 psig) through the 1/4 inch high...

...g of Tween-80. The vessel was filled with carbon dioxide at 5000 psig and **heated** to 24degreesC, then left to stand for 20 minutes for complete dissolution and for attaining equilibrium. Separately, 2% w/w suspension of egg phospholipid (Lipoid E80) in a 5.5% **solution** mannitol was homogenized at 6000 psi with an Avestin Emulsiflex C50 for 15 minutes. The pH of the suspension was adjusted to 8.0 with aqueous sodium hydroxide **solution**. The carbon dioxide **solution** of cyclosporine and Tween-80 was expanded into the aqueous **dispersion** of egg phospholipid. Very rapidly, in 3 minutes, a translucent aqueous suspension of 23 nm

...Title Terms: **COMPOUND**

International Patent Class (Main): **A61K-009/14** ...

... **A61K-009/16** ...

... **A61K-009/51**

International Patent Class (Additional): **A61K-031/216** ...

... **A61K-031/57** ...

... **A61K-038/00** ...

... **A61K-047/24** ...

... **A61K-047/34**

37/3,K/108

DIALOG(R)File 350:Derwent WPIX

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013586966 **Image available**

WPI Acc No: 2001-071173/200108

XRPX Acc No: N01-053846

Aerosol and droplet production method , e.g. for drug delivery, fuel injection or microfabrication, in which liquid is forced through an inner feed tube toward a discharge orifice and subjected to violent action by a second fluid

Patent Assignee: ARADIGM CORP (ARAD-N); UNIV SEVILLA (UYSE-N)

Inventor: GANAN-CALVO A; ROSELL J

Number of Countries: 094 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200076673	A1	20001221	WO 2000US15931	A	20000609	200108	B
AU 200053318	A	20010102	AU 200053318	A	20000609	200121	
EP 1192009	A1	20020403	EP 2000938249	A	20000609	200230	
			WO 2000US15931	A	20000609		
JP 2003501257	W	20030114	WO 2000US15931	A	20000609	200306	
			JP 2001502989	A	20000609		
AU 767486	B	20031113	AU 200053318	A	20000609	200381	

Priority Applications (No Type Date): US 99138698 P 19990611

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200076673 A1 E 35 B05B-007/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200053318 A Based on patent WO 200076673

EP 1192009 A1 E B05B-007/00 Based on patent WO 200076673

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

JP 2003501257 W 36 B05B-007/04 Based on patent WO 200076673

AU 767486 B B05B-007/00 Previous Publ. patent AU 200053318

Based on patent WO 200076673

Aerosol and droplet production method , e.g. for drug delivery, fuel injection or microfabrication, in which liquid is forced through an inner feed tube toward a discharge orifice and subjected to violent...

Abstract (Basic):

... The feed tube (5) for the first liquid is located inside a pressure chamber (2) which is continually filled with a second fluid, i.e. liquid immiscible in the first liquid or gas , through a port (4). At the tube exit (6) the first liquid forms a reduced diameter, focused flow stream and is destabilized into small particles. Particle size is governed by the balance between the first liquid surface tension and the amplitude of the turbulent pressure fluctuations at the chamber exit (7).

... For creating aerosolized particles having a desired size for wide ranging applications particularly, drug delivery by aerosolized pharmaceutical compositions , mass production of highly dispersible dry pharmaceutical particles suitable for drug delivery systems , fuel injection systems for internal combustion

WO
PRIORITY
9 JUN 2000
6 SEPT 2000

engines, and microfabrication and molecular assembly of objects and components...

...Provides high frequency droplet **generation** , low requirements on **liquid** pressure, low sensitivity of drop size to inner **liquid** flow rate, and little apparent effect of **atomizer** size on droplet size...

Title Terms: **AEROSOL** ;

43/3,K/47

DIALOG(R) File 350:Derwent WPIX

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013578319 **Image available**

WPI Acc No: 2001-062526/200108

XRAM Acc No: C01-017596

XRPX Acc No: N01-046894

Manufacture of solid particulates containing chemically -,
biologically- or pharmaceutically -active materials , employs rotary
atomizer directing droplets into fluids causing them to set

Patent Assignee: HUETTLIN H (HUET-I)

Inventor: BAUER K H; HUETTLIN H

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 19923628	A1	20001123	DE 1023628	A	19990522	200108 B
DE 19923628	C2	20020307	DE 1023628	A	19990522	200219

Priority Applications (No Type Date): DE 1023628 A 19990522

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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DE 19923628	A1	18		B01J-002/02	
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DE 19923628	C2			B01J-002/02	
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Manufacture of solid particulates containing chemically -,
biologically- or pharmaceutically -active materials , employs rotary
atomizer directing droplets into fluids causing them to set

Abstract (Basic):

... **Liquid** (28) containing active(s) is sprayed (50). The droplet trajectory (F) passes through a further fluid (note: this is high in the spraying unit and may be **gaseous**). Droplets are intercepted and carried away by yet a further **liquid** (82). At the end of the trajectory this **liquid** moves at an angle alpha with respect to the trajectory (F). Droplet solidification to particles (86) is assisted by the **liquid** (82).

... Preferred features: The **liquid** (82) moves as a curtain, which is entered by the sprayed droplets. The sprayer projects droplets radially in several directions. The moving **liquid** medium surrounds the sprayer. The sprayer is rotated about its longitudinal axis when operational. The **liquid** (82) moves almost vertically. The angle alpha is 20-60degrees, preferably 75-115degrees. Trajectory length is 2-100 cm, preferably 5-20 cm. The sprayer is **heated** and the temperature of the **liquid** (82) is **controlled** . The **liquid** is a coolant. Both surrounding fluids are coolants. The fluid (82) is water, or a reagent setting the droplets by **chemical** reaction. Solidification **produces** a gel...

...To **manufacture** solid particulates containing **chemically** -,
biologically- or **pharmaceutically** -active **materials** .

...Large quantities of the smallest **particles** can be prepared. Their **size** and shape exhibit little variation, a **particular** benefit in **medicinal** applications. The spraying **liquid** is especially a colloidal **dispersion** of polymers, emulsions, suspensions, **mixed systems** or melts. Droplet sizes range from 1 nm to 500 nm. Parameters of the **process** permit **product** particle sizes and shapes size to be varied over a wide range. Processing is continuous, enhancing **product** uniformity. Yield is almost 100...

... liquid to be sprayed (28...

...further liquid (82

Title Terms: **MANUFACTURE** ;

50/3,K/20

DIALOG(R)File 350:Derwent WPIX

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009262649

WPI Acc No: 1992-390062/199247

XRAM Acc No: C92-173104

High output generator of aerosols with single particle size -
comprises seed material and aerosol atomiser producing aerosols
of desired particle size which are heated and condensed around
seed material nuclei

Patent Assignee: MSP CORP (MSPM-N)

Inventor: LIU B Y H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5160664	A	19921103	US 91708306	A	19910531	199247 B

Priority Applications (No Type Date): US 91708306 A 19910531

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5160664	A	6	C09K-003/30	

High output generator of aerosols with single particle size - ...

...comprises seed material and aerosol atomiser producing aerosols
of desired particle size which are heated and condensed around
seed material nuclei

...Abstract (Basic): A high output aerosol generator that produces aerosols
of a controlled **particle size** and that allows these **sizes** to be
varied over a wide range comprises an atomising unit that includes a
seed atomiser and at least two other aerosol atomisers that produce an
aerosol spray of varied **concentrations**. The seed material is sprayed
into a manifold where it **mixes** with the relevant mixt. of **aerosols**
to produce the **desired aerosol particle size**. This **mixture** is
controlled using a computer programme that in turn selects the relevant
solenoid valve that...

...into the manifold block and into a heater matrix where it is then
vaporised. This **gas** then flows into a pressure vessel and into a
condenser where the aerosol particles condense on to the seed material
nuclei to form uniformly **sized particles**. The **particle size** of
each batch is changed using the solenoid valves to allow varying
amounts of aerosol, with varying **concentration** levels to be
introduced into the manifold for mixing with the seed **material** prior
to **vaporisation** and subsequent condensing...

...USE/ADVANTAGE - Used for reliably generating a high vol. of uniformly
sized aerosol particles and allows these **particles sizes** to be
varied across a wide range quickly and easily so that a range of...

International Patent Class (Main): C09K-003/30

International Patent Class (Additional): B01F-005/02